

From: **Ex. 6 Personal Privacy (PP)**
Sent: Monday, May 22, 2017 10:05 AM
To: Shea, Valois
Subject: Uranium extraction project in western South Dakota.

Dear Environmental Protection Agency,

At the recent hearing held in Rapid City I referenced a study conducted by the U.S. Geological Service. This study was in reference to a series of earthquakes instituted by the injection of nuclear and hazardous wastes mixed with water into bore holes in the area of the Rocky Mountain Arsenal in Colorado. These incidents were in the 1960's.

Although these were deep bore holes, this unfortunate process illustrates that, in spite of any geological knowledge we have attained, we still do not have an understanding of the far-reaching effects of any possible damage we can do to the structure of the Earth.

As a lifelong resident of the Black Hills of western South Dakota and a student of the geology of this area I know from my experience and knowledge how fragile is the rock strata of the western Black Hills. Particularly the underlying limestone and sandstone.

I shall repeat some incidents that reveal the porosity of the rock strata. When I was active in drilling oil wells not far from the proposed Dewey-Burdock uranium extraction program we would often 'lose circulation'. This meant that we would drill into large cavities or fissures underground which would carry away our drilling mud or lubricant. A rancher who lives not far from the proposed project decided to drill a new water well. He actually has a water-well-drilling business. He was in the process of drilling this well when he suddenly drilled into a huge cavity. He withdrew his drilling pipe and later notified the superintendent of the nearby Jewel Cave National Monument. The Jewel Cave people came to the bore hole site with fiber optic cameras and equipment to put down the hole. When asked what they saw, they responded: "It looks just like Jewel Cave."

I am a member of the Darton Geological Society. We have guest speakers at our monthly meetings. One speaker presented professional documentation related to a study of how fluids migrate underground in limestone and sandstone strata. In addition to a bore hole in which fluid was injected they had a series of bore holes near the injection hole to monitor for the migration of fluids. They had injected harmless ionized water and it was amazing how quickly and how far the fluid had spread from the injection site. Another speaker, who was a professor from my alma mater, South Dakota School of Mines and Technology, was the project leader in a project to drill experimental bore holes through South Dakota. Many holes were drilled but the astounding knowledge gained was that it was discovered that a fault line existed either under the Missouri River or paralleling it for a great distance from the Nebraska border northward.

We are reminded that the famous Homestake Mining Company did core-drilling from the surface down to great depths to discover new ore bodies. As a result of their core drilling they decided to excavate a tunnel 2 miles in length to where they assumed the new gold ore body lay. When they got to the area they did not find the any new gold ore bodies. This was done relatively recently before Homestake gave up the gold mine after some 140 years. This work was done in hardrock, of course, and not sedimentary stone, but the fact is evident. We do not really know what lies beneath the surface.

One of the colored displays at the EPA hearings up here in the Black Hills showed a cross section of the underlying rock strata in the Dewey-Burdock area. I submit that the drawing is NOT REPRESENTATIVE of the underlying rock. Instead of solid rock displayed it should more accurately be shown to be filled with cavities, holes and fissures, Much like a sponge or Swiss cheese.

I find that the series of 'monitoring bore holes' around the perimeter of the proposed project is misleading and moot. If contaminating fluids reach these monitoring holes it is too late. The underground would already be contaminated. From maps of the proposed project area I see that the proposed 'holding dams/ponds' are in the area of possible flash flooding. A few years ago I was traveling the gravel road from Dewey to the Jewel Cave area. This would be northwest of the proposed project. As I came around a curve I encountered many burned logs, trees and debris covering the road. This debris had been swept down a basin in a flash flood from a forest fire many miles distant. A similar flash flood would destroy these holding ponds and further contaminate the environment. I submit that if the go-ahead for this uranium project was to be submitted to a vote of the local and area residents, the people would adamantly vote against the project.

We strongly urge the EPA to NOT GRANT any of this drilling and water injection to proceed. This company does not have the monetary resources to remedy any of the possible detrimental effects to our environment and peoples health. We in the Black Hills daily confront the disastrous effects of the abandoned Gilt Edge Mining project. Now a superfund site.

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